HOH RIVER (US 101, MP 174.1–174.6) CED RETROFIT

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INTRODUCTION

The Hoh River retrofit site is along U.S. Highway 101 (US 101) between mile posts 174.1 and 174.6, south of Forks. US 101 is a two-lane route and the only route around the Olympic Peninsula capable of carrying commercial traffic. It is of particular importance as a transit route for consumer goods, tourist traffic, and timber products.

THE CED PROBLEM

In the vicinity of the CED retrofit site, SR 101 is aligned generally parallel with the Hoh River valley in an area where the river has a natural tendency to migrate laterally across a wide, alluvial floodplain. This retrofit site is situated on an outside meander bend of the river where there has been a history of repetitive bank erosion problems. Past attempts to stabilize the site under emergency conditions failed to provide a long-term solution and resulted in negative impacts on aquatic and riparian resources, including salmon habitat.

CED RETROFIT SOLUTION

The Hoh River retrofit was designed by Tim Abbe of Herrera Environmental Consultants. The Integrated Streambank Protection Guidelines were used to help design the long-term solution to the continued erosion problem. By incorporating these guidelines, this project also enhanced aquatic habitat functions in the project reach by increasing channel complexity and LWD cover. Species that will benefit from this project include bull trout, Chinook, chum, coho, sockeye, and steelhead.

The project was constructed during summer/fall 2004. Two types of log-jam structures were incorporated into the design to affect the location of the river thalweg and diffuse erosive forces on the outside of the meander bend. Four apex bar/flow splitter logjam structures were placed upstream of the problem site. These deflector and apex bar structures will push and divide the flow onto the large gravel bar that is opposite of the riprap revetment. This will reduce pressure on the left bank. The gravel bar contains many excellent habitat features and the redirection of frequent flows there should readily provide habitat gains that will help mitigate for the short-term project impacts. Several L-shaped deflector/diffuser log-jam structures integrated into the outside of the meander bend were also incorporated into the project. Each structure was backfilled to create a riparian buffer between the road and the river, and the stabilized areas are currently being re-vegetated with a mixed community of native deciduous and coniferous trees. A series of these structures promote creation of a continuous length of reinforced riparian area. All of the component structures were topped with a platform of small logs and 6-8 inches of topsoil. These were then planted with native tree and shrub species, therefore providing additional habitat.

Funding was awarded for this project from the Federal Highway Administration (FHWA) due to a federal disaster declaration from previous flood damage and a previously conducted reach analysis that identified a long-term solution. WSDOT matched 20% of the funds for this project. The CED retrofit project cost approximately $821,000 for plans and engineering and $7,210,000 for construction.

(Please see photo on page 2.)

Figure 1. Hoh River CED Retrofit in October 2004.